

CLAIMS

1. An enzyme electrode comprising a
conductive member and an enzyme, wherein a first
5 mediator and a second mediator are immobilized by a
carrier onto the conductive member, the first
mediator and the second mediator having different
redox potentials,.

2. The enzyme electrode according to claim 1,
10 wherein the first mediator has a redox potential more
negative than the redox potential of the second
mediator, and the electron transfer reaction rate
between the second mediator and the conductive member
is higher than the electron transfer reaction rate
15 between the first mediator and the conductive member.

3. The enzyme electrode according to claim 1,
wherein the first mediator has a redox potential more
positive than the redox potential of the second
mediator, and the electron transfer reaction rate
20 between the second mediator and the conductive member
is higher than the electron transfer reaction rate
between the first mediator and the conductive member.

4. The enzyme electrode according to claim 1,
wherein the first mediator serves to transfer
25 electrons to or from the enzyme, and the second
mediator serves to transfer electrons to or from the
first mediator.

5. The enzyme electrode according to claim 1, wherein the conductive member has a porous structure.

6. The enzyme electrode according to claim 1, wherein the first mediator and the second mediator
5 are respectively at least one substance selected from metal complexes, quinones, heterocyclic compounds, nicotinamide derivatives, and flavin derivatives.

7. The enzyme electrode according to claim 1, wherein the first mediator has a redox potential more
10 negative than the redox potential of the second mediator, and is employed as an anode.

8. The enzyme electrode according to claim 1, wherein the second mediator has a redox potential more positive than the redox potential of the second
15 mediator, and is employed as a cathode.

9. A sensor, employing the enzyme electrode set forth in any of claims 1 to 8 as a detection portion for detecting a substance.

10. A fuel cell, employing the enzyme
20 electrode set forth in any of claims 1 to 8 as at least one of anode and a cathode.

11. An electrochemical reactor, employing the enzyme electrode set forth in any of claims 1 to 5 as a reaction electrode.